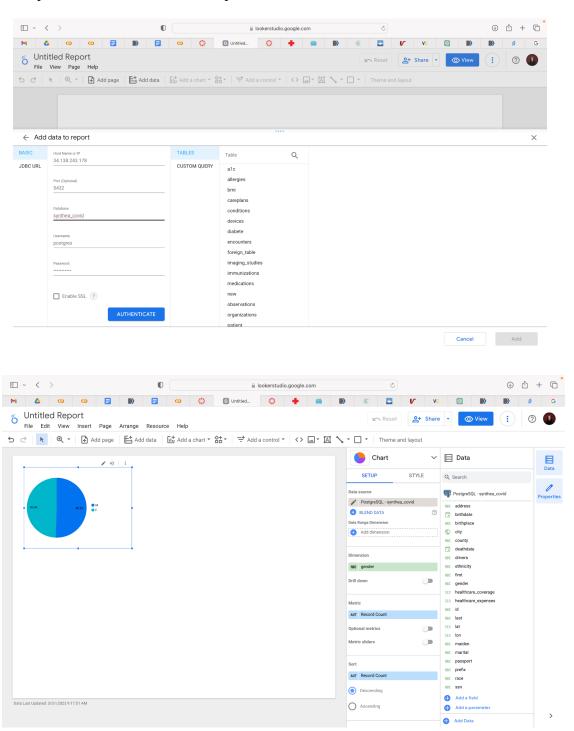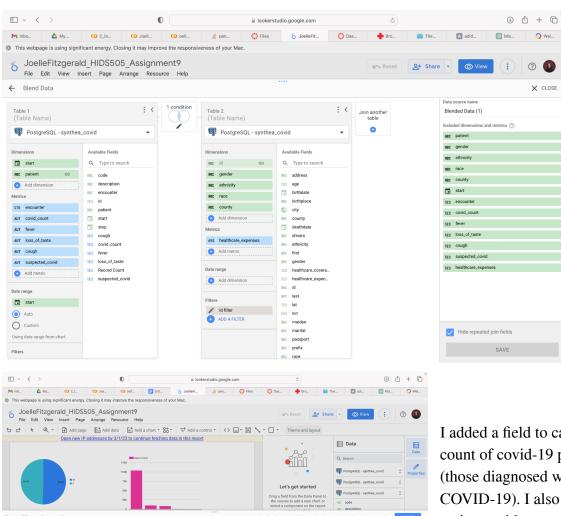Joelle Fitzgerald

HIDS 505 Assignment 9

Link to dashboard:
https://lookerstudio.google.com/reporting/e0c6df50-ef34-43f7-a6f3-f545509f0bfa

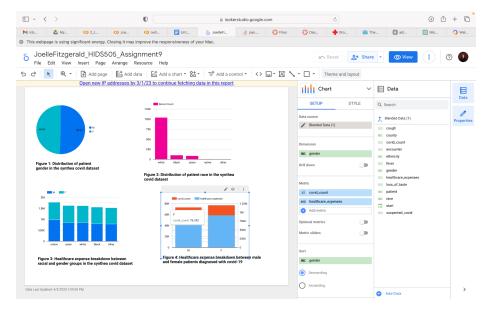Snapshots of dashboard creation process:

I added a field to capture the count of covid-19 patients (those diagnosed with COVID-19). I also explored patients with a recorded fever, cough, and loss of taste, but chose to only include patients diagnosed with COVID-19 for the purpose of this assignment.

Hovering over the bar graphs, the count of covid-19 patients and average healthcare expenditure is shown between males and females.

Figure 1: Distribution of patient gender in the synthea covid dataset

Figure 2: Distribution of patient race in the synthea covid dataset

Figure 3: Healthcare expense breakdown between racial and gender groups in the synthea covid dataset

Figure 4: Healthcare expense breakdown between male and female patients diagnosed with covid-19

Describe the purpose, user requirements, functions and what actions can be taken to address any insights.

The purpose of all figures is to easily convey trends and develop insights through graphs and charts of data from the synthea covid dataset. From this visual analysis, administrators can understand the breakdown of patients, costs, and conditions in order to target certain areas of improvement. It is important to understand trends in data and visualize demographic, cost, and patient health status distribution overtime in order to critically think and hypothesize working solutions that strive to facilitate positive patient and facility outcomes.

Figure 1: Distribution of patient gender in the synthea covid dataset

Figure 1 depicts the breakdown of gender in the synthea dataset, allowing users or administration to understand and visualize the female to male patient ratio. A pie chart is an easy to analyze, eye-catching display that clearly shows male and female patient percentage in the synthea covid dataset is close to equal.

Figure 2: Distribution of patient race in the synthea covid dataset

Figure 2 displays a bar graph of patient race in the synthea covid patient dataset. This bar graph is similar to Figure 1 as it clearly depicts the breakdown of racial groups recorded in the synthea covid dataset and allows users to clearly see which racial group occupies the most patient records. In this case, we see that patients identifying at white occupy the majority which may be insightful for future data analysis.

Figure 3: Average healthcare expense breakdown between racial and gender groups in the synthea covid dataset

In Figure 3, average healthcare expenses of patients in the snythea covid dataset are broken down between racial groups and gender. Now that we know the ratio of male to female and distribution of race in our dataset, it may be insightful to learn how the average medical expense breakdown ranges between different genders and races in the synthea covid dataset. From this bar graph, we can see that patients identifying as native occupy the highest healthcare expenditures. It may be interesting to explore this phenomenon further to understand why this racial group, although occupying less records in the synthea covid dataset, has high medical care expenses compared to other racial groups.

Figure 4: Average healthcare expense breakdown between male and female patients diagnosed with covid-19

Blending the conditions and patient tables of the synthea covid dataset to only include patients diagnosed with COVID-19, we can see the average healthcare expense and covid diagnosis count breakdown between male and female patients. In Figure 4, it is evident that female patients have been diagnosed more with COVID-19 than males in the synthea covid dataset, and therefore, also show having a higher average healthcare expenditure. However, it is interesting to note, although male patients do not occupy the majority of covid-19 diagnoses, they still have a comparable healthcare expenditure to female patients.

Utilizing the trends shown in the figures above, administration and clinicians can explore workflows and medical care from a different angle in order to improve healthcare spending and patient care as a whole. Recommended areas for future analysis and discussion include observing differences in female and male COVID-19 patient care, resource management, and length of stay or native/black/asian vs. white patient care and patient outcomes as the data demonstrates inconsistencies between these populations.